

**Pre-Service Educators Working Group Teleconference
Thursday, 9 December 2004 1:00-2:30 Eastern**

Members Attending

Ilan Chabay, The New Curiosity Shop (Framework)
Larry Cooper, Science Mission Directorate
Julie Lutz S2N2
Dan McAlister, Space Telescope Science Institute
Laurie Ruberg, Co-Chair, MARSSB
Gregg Schultz, SECEF
Stephanie Shipp, Co-Chair, SCORE
Bill Waller, NESSIE

Members Unable to Attend

Bernice Alston, Director, Division of Elementary and Secondary Education, NASA HQ
Jennifer Grier, SEU Forum
Art Hammond, SSE Forum
Denise Smith, Co-Chair, ASO

1) American Astronomical Society (AAS) Annual Conference - All

The AAS is hosting a K-12 pre-service session at their 205th meeting in San Diego, California on 9-13 January 2005. The preservice education strand of sessions will be held on Wednesday, 11 January from 2:00 to 3:30 p.m. The AAS 205th Conference web site is: <http://www.aas.org/meetings/aas205/index.html>

Comments:

There will be nine preservice teacher education related sessions as part of the AAS educational strand of presentations.

- The Preservice Educators Working Group will have a short presentation to describe why the working group was formed, its goals, and encouraging AAS members to share their interests and initiatives for preservice education with the Space Science Preservice Educators Working Group. Stephanie, Denise, and Laurie will be co-leading this presentation.
- Julie Lutz will present an overview of S2N2 preservice education outreach activities.
- Bill Waller will present an overview of NESSIE outreach and needs assessment in regard to preservice educators in the New England area.
- Greg Schultz and Tim Slater will present a session titled, "How is space science relevant to preservice science education?" Greg will share handouts he prepares for this session with the working group.

- All members of the Preservice Educators Working Group attending the AAS meeting in San Diego will get together for an informal meeting—perhaps over dinner one evening.

2) Efforts to Identify Existing Preservice Teacher Programs

- a. Short survey to identify collaborations between space scientists and preservice faculty already underway

A five-question survey to find out what preservice educator programs members of the Space Science E/PO Support Network are aware of was e-mailed to members of the Preservice Educator WG on 30 November 2004.

Comments:

Everyone received copies of the survey. It was recommended that those attending AAS bring printed copies of the survey to distribute.

Julie Lutz mentioned that she is working with a grant at the University of Washington called, “Teachers for a New Era” funded by the Carnegie foundation that started last spring. The project is designed to measure outcomes of preservice teacher preparation. The science faculty involved is primarily space science because the other science faculty haven’t yet gotten involved in this project. This grant follows students from their school training through the first three years of their teaching. At the University of WA, preservice teachers get their undergraduate degree in an area of discipline and then return to school to get their teaching certificate and masters degree in education.

- b. Proposed WG Winter Research Focus - Stephanie, Laurie, and Denise
 - How do the audiences of elementary, middle, and high school teachers differ in how they are trained?
 - In other words, what are our effective points of entry into the pre-service education of elementary, middle, and high school teachers?

Comments:

Greg and Ilan suggested that preservice teacher preparation programs fall into several categories nationally. There is a trend for science department to be responsive to offering courses that better meet educators’ needs. These schools may become model programs for others.

A suggestion was made to look at NSF and Department of Education funding for preservice teacher preparation to identify key programs with exemplary science education initiatives. Stephanie and Laurie agreed to review and report back on some of the NSF-funded model programs.

Bill raised the question as to where is the market for preservice science educators? Understanding this may show where efforts can make the largest impact in terms of numbers of preservice teachers transitioning from school to work.

In response to Bill's question Julie described a Washington-based program that focuses on the needs of middle school science programs. She also mentioned the Arizona Collaboration for the Education of preservice teachers.

Ilan asked whether there was interest in international education initiatives. He is involved in discussions with science education initiatives in Japan and Sweden. All agreed that we'd be interested in having him report on what he learns from these initiatives outside the U.S.

Laurie suggested that the TIMSS research reports highlight science education performance and instructional programs on a global basis. These reports are all posted on the web and can be viewed at <http://nces.ed.gov/timss/>

The discussion shifted to examining the role that community colleges play in offering science and math preparation courses for future teachers. Community colleges also play a key role in recruiting students for teaching and other education programs.

Questions emerged as to whether there is a need for recruiting science teachers and what teacher recruiting looks like. Are there good spokespersons for science education? How can better recruitment information get to students?

Recruitment is also a key issue for those who come to teaching by way of changing careers. Stephanie mentioned that Teach for America is a recruiting mechanism for professionals changing careers.

3) Report-out on professional societies of interest - Greg Schultz

Greg Schultz distributed a list of organizations and professional societies of interest to the Preservice Educators Working Group. He will continue to expand this list based on additional suggestions from the discussion in the telecon. This list of resources and societies will be posted on the Preservice Educators Working Group web site hosted by SCORE at http://www.lpi.usra.edu/education/score/pre_service.shtml

Greg also recommended that everyone should read "Teacher Learning" – which is chapter 8 in `How People Learn: Brain, Mind, Experience, and School (Bransford, Brown, & Cocking, 2000) published by the National Research Council. This book is available on the web at <http://www.nap.edu>.

4) Snap-shot of existing programs - Dan McCallister (The following summarizes key points in Dan's presentation.)

At the Space Telescope Science Institute (STSCI) Dan and Bonnie Eisenhammer have worked together to assess who their audiences are for STSCI educational materials—especially the Amazing Space resources.

Six years ago STSCI conducted an impact study to find out how many states were using Amazing Space materials. Dan used Google search engines to compile a list of specific states, districts, professional organizations, colleges, and universities—especially colleges of education—who were linking to Amazing Space web pages.

Twenty-two of the 50 largest school districts in the U.S. are using Amazing Space. Teachers of teachers are using these materials to address the following educational goals:

- How to use web-based technologies to develop WebQuests
 - Students develop web pages to identify resources
 - Students develop lessons and units
- How to integrate activities/modules in the curriculum for preservice and in-service level teachers
- How to use interactive lessons: Amazing Space served as a model
- How to enhance a curriculum—i.e., using Hubble Deep Field to incorporate mathematics into science lessons
- How to teach particular pedagogical techniques such as inquiry learning
- How to use engagement simulations with students—getting teachers to develop their own instructional lessons that incorporate these simulations

Educators have mapped STSCI web resources from national standards to specific state/district curriculum standards. In some cases STSCI (Amazing Space activities) have been mapped to state and local content standards and in other cases to state and local reading standards.

Colleges have used Amazing Space activities for astronomy for non-science majors as lab activities such as those addressing galaxy classification.

Recently STSCI has formed a partnership with a local college that prepares elementary educators.

5) LPI to host a one-day Pre-Service Educator Conference - Stephanie

Before the First Day of School - Pre-Service Teacher Preparation and the Role of the Space Science Community, Sunday, March 13, 9:00 a.m. to 4:00 p.m., Lunar and Planetary Institute, Houston, Texas.

6) Other

The suggestion was made that the Preservice Educators Working Group do a brochure about itself that can be distributed at conferences like the American Association for Colleges of Teacher Education.